9-17-1996

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Richard L. Knight, *NFMA and Ecosystem Management*, *in* THE NATIONAL FOREST MANAGEMENT ACT IN A CHANGING SOCIETY, 1976-1996: HOW WELL HAS IT WORKED IN THE PAST 20 YEARS? WILL IT WORK IN THE 21ST CENTURY? (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law 1996).

NFMA AND ECOSYSTEM MANAGEMENT

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THE NATIONAL FOREST MANAGEMENT ACT IN A CHANGING SOCIETY

September 16-18, 1996

Natural Resources Law Center
University of Colorado
School of Law
Boulder, Colorado

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I. Summary

The past century has witnessed an increasing level of conflict regarding the uses of our public lands and their natural resources. Out of this dissension has come the need for change; that business as usual is no longer acceptable. Political and agency leaders, weary of conflict and yearning for consensus, are calling for a shift by land management agencies toward collaborative processes that will affect both protected lands as well as multiple use lands and lands in private ownership. Leaders in the Clinton Administration, for example, want environmentalists, industry, labor and community leaders to resolve problems at the local level in face-to-face meetings with resource managers. As though this weren't enough, natural resource agencies have perceived that the loyalties of their own employees might be divided between stewardship of natural resources and agency mandates. When Jeff DeBonis, a former Forest Service employee formed the **Association of Forest Service Employees for Environmental Ethics**, and subsequently organized **Public Employees for Environmental Responsibility**, agencies conceded it was time for a change.

The United States Forest Service was the first institution to break this hopeless cycle of conflict. Under the rubric of "New Perspectives," they underwent a very public self analysis which spanned a three-year period. What emerged from this exhaustive appraisal of their past was a concept they named "ecosystem management." Ecosystem management has many definitions but most agree that it argues for the stewardship of

commodities, amenities, and biological diversity. This rallying theme of the Forest Service was quickly picked up by other state and federal agencies, from the Department of Defense to the U.S. Fish and Wildlife Service. By its wide and ready acceptance, it was apparent that the Forest Service had struck a deep nerve, one whose connections penetrated to the very heart of human-land relations.

While the interest in ecosystem management has reached a nationwide crescendo, additional new ideas have found their way into the arena of natural resources policy. These include the emerging concepts of conservation biology, landscape ecology, ecological restoration, and natural resources human dimensions. Each of these concepts have developed into disciplines with international societies formed around them, scientific journals established, graduate and undergraduate programs established at colleges and universities, and job positions created in most state and federal resource agencies. Collectively, these disciplines have much to contribute to sustainable uses of our public lands.

Given these new and emerging concepts, with their emphasis on protecting biological diversity, it is worthwhile to examine whether NFMA can accommodate these ideas. Does NFMA adequately protect biological diversity and allow for the management of public lands at the landscape level? Does NFMA acknowledge the important role of human dimensions in land-use management decisions, particularly as they relate to stewardship across administrative borders? My conclusion is that the law is surprisingly robust when dealing with these issues.

II. Does NFMA protect biodiversity?

A. The law specifically requires the Forest Service to "provide for diversity of plant and animal communities."

1. Secretary of Agriculture convened a committee of scientists to write implementing guidelines to provide specific direction to the Forest Service.

a. Title 36, section 219 of the code addresses this issue. The committee wanted NFMA regulations to "go beyond a narrow and limited restatement of the language of the act to assure that the Forest Service shall indeed provide for diversity by managing and preserving existing variety."

b. Diversity is defined as the "distribution and abundance of different plant and animal communities and species within the area covered by a Land and Resource Management Plan."

c. This definition excludes the genetic and landscape aspects of biodiversity. In addition, diversity is affected by individual forest plans, which cover administrative, not ecological boundaries.

B. To ensure the protection of biodiversity, the committee specifically required the Forest Service to address: viable populations, indicator species, scientific inventories, and species monitoring.

1. A viable population was defined as "one which has the estimated number and distribution of reproductive individuals to ensure its continued existence and is well distributed in the planning area."

2. Because there are hundreds of species on any given forest, NFMA regulations require that indicator species be used so as to indicate the general health of ecosystems

a. The committee give the Forest Service five categories of species to choose from: threatened and endangered species; sensitive species, game and commercial species; nongame species of interest; and ecological indicators.

3. An analysis of viable populations and indicator species is dependent on adequate inventories. The committee required the Forest Service to conduct inventories of wildlife that include "quantitative data making possible the evaluation of biological diversity in terms of its prior and present condition."

4. Because wildlife populations are dynamic, NFMA regulations also require the Forest Service to monitor wildlife in response to logging, road building, and other activities.

C. The upshot of these regulations suggests that NFMA has the potential to adequately protect biological diversity. Does the evidence show that they have?

1. Evidence suggests that they are not adequately protecting viable populations. This has been attributed to the observation that Forest Service planning does not model the effects of existing or proposed habitat fragmentation. The agency has insufficient data on populations, there is a lack of landscape level planning, and a lack of cooperation and

communication between agencies that share administrative boundaries.

2. The results are mixed whether the Forest Service chooses appropriate indicator species. Species that are habitat generalists or those that are human adapted are often chosen. More appropriate species would be those considered keystone to ecological communities.

3. Historically, the Forest Service has not conducted adequate inventories of biological diversity nor developed monitoring programs to track the welfare of indicator species. There is encouraging evidence that this is changing as more and more forests are developing dynamic geographical information systems.

III. Suggestions to more fully integrate ecosystem management into NFMA

A. Replace the present planning system with one that occurs at a landscape level. Because ecosystems are dynamic, structure-and-process shaped, they do not necessarily follow administrative borders. This will require the Forest Service to find better ways to coordinate their activities. There is considerable evidence that this is occurring.

B. The Forest Service needs to develop a more effective way of dealing with neighbors, both other agencies and private land owners. This will require the Forest Service to give up a command-and-control mentality when dealing with cross-border issues. The Forest Service will have to learn how to be simply partners with others, rather than the controlling agency.

C. The Forest Service needs to improve use of information and technical tools.

Constructing data bases on species of concerns and their habitat requirements is a critical first step in managing for biological diversity. Monitoring programs, although labor intensive and of little popular appeal, need to be instituted over a wide range of species, vegetation components and ecological processes.

IV. Conclusion

A. While it is easy to denigrate congressional legislation, and agency determination for legitimate reform, that is not my intention. There is much to be positive about NFMA in regards to ecosystem management and the protection of biological diversity. NFMA was drafted to ensure the Forest Service was cognizant of the new wave of American environmental consciousness. As it stands, the NFMA regulations are leading the Forest Service into the world of conservation biology, landscape ecology, human dimensions, and ecological restoration, all parts of a broader mandate captured in ecosystem management.

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